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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/060,497	01/30/2002	M. Lawrence Goldstein	GCSD-1211 (H7128)	8473

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EXAMINER

LE, HOANGANH T

ART UNIT PAPER NUMBER

2821

DATE MAILED: 07/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
10/060,497

Applicant(s)
GOLDSTEIN

Examiner
HOANGANH LE

Art Unit
2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jun 13, 2003
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

1. The amendment filed on June 13, 2003 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1,2,4-8,11,18,19, and 21-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Jeon (the US Patent No. 5,327,146).

The Jeon reference teaches in figures 3 and 6 a phased array antenna comprising: a substrate 2; and a plurality of spaced apart phased array antenna elements 4,5 carried by the substrate 2 and arranged along an imaginary Archimedean spiral (figure 3 and col. 2, lines 56-58). The imaginary Archimedean spiral comprises a plurality of levels (figure 3). The imaginary Archimedean spiral is inherently defined by the polar coordinate equation $r=a\theta N$, where r is a radius, θ is an angle, a is a real number, and $N=1$. The plurality of phased array antenna elements 4,5 have a substantially equal spacing along the imaginary

Archimedean spiral. The phased array antenna has an operating wavelength λ , and wherein the substantially equal spacing is less than about 10λ (col. 2, line 54). The plurality of phased array antenna elements comprises greater than about 20 phased array antenna elements (figure 3). All of the plurality of phased array antenna elements of the phased array antenna are along the imaginary Archimedean spiral (figure 3).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3,9,10,12-17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeon (cited above) in view of Vail et al (the US Patent No. 6,522,294).

The Jeon reference teaches every feature of the claimed invention, excluding a plurality of element controllers each connected to at least one of the phased array antenna elements; and a central controller connected to the plurality of element controllers, and a spacing between adjacent pairs of phased array antenna elements along the imaginary Archimedean spiral being substantially equal to a radial spacing between adjacent levels.

The Vail et al reference teaches in figure 2 a plurality of element controllers 15

each connected to at least one of the phased array antenna elements; and a central controller 14 connected to the plurality of element controllers in order to provide beam steering (see the abstract).

Since one of ordinary skill in the art would recognize the benefit of providing beam steering, it would have been obvious to provide Jeon with element controllers and a central controller as taught by Vail et al.

Regarding claims 3, 12-17 and 20, it would have been an obvious matter of design choice to have a spacing between adjacent pairs of phased array antenna elements along the imaginary Archimedean spiral being substantially equal to a radial spacing between adjacent levels, since such a modification would have involved a mere change in the distance of components. A change in distance is generally recognized as being within the level of ordinary skill in the art.

Response to Arguments

6. Applicant's arguments filed June 13, 2003 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., in a phased array antenna, other components (e.g. phase shifters) would be used in place of a

feeder structure) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argues that Jeon does not teach antenna elements along an imaginary Archimedean spiral. Examiner respectfully disagrees. Jeon does teach in figure 3 antenna elements 4,5 along an imaginary Archimedean spiral 6. Jeon also teaches on column 2, lines 56-58 that the distance (D_L) between adjacent line portions of the feeder 6 is λ_g . This means that the spiral 6 is an imaginary Archimedean spiral.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

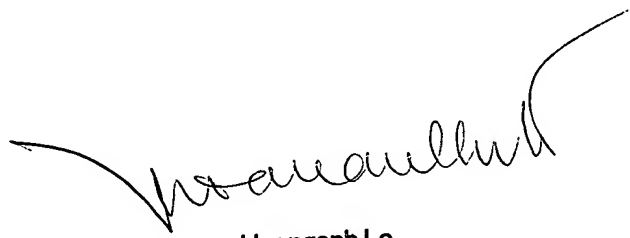
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than

SIX MONTHS from the mailing date of this final action.

Correspondence

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner Hoanganh Le whose telephone number is (703) 308-4921.
9. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is (703) 308-0956.
10. Papers related to Technology Center 2800 applications **only** may be submitted to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center Fax Center number is (703) 308-7722 or (703) 308-7724.

Hoanganh Le
Primary Examiner
Art Unit 2821
July 22, 2003



Hoanganh Le
Primary Examiner